

CONTACT INFORMATION Jet Propulsion Laboratory
M/S 183-301
4800 Oak Grove Drive
Pasadena, CA 91109
Office number: (818) 354-3194

PERSONAL INFORMATION Gender: Male
Citizenship: Italian

EDUCATION **Heriot-Watt University**

Ph.D. in Chemistry **2011 - 2015**

LASSIE Early Stage Researcher (ESR) **2011 - 2014**

- Thesis title: *Thermal and Non-Thermal Processes of Simple Molecules on Model Interstellar Ices.*
- Supervisors: Prof. Martin R. S. McCoustra; Prof. Martin J. Paterson

University of Perugia

M.Sc. in Physical Chemistry **2009 - 2011**

- Final grade: 110/110 cum laude
- Thesis title: *Synthesis and Theoretical and Experimental NMR Study of Au(I) Complexes with Heterocyclic Carbenes.*
- Supervisors: Prof. A. Macchioni, Prof. F. Tarantelli, Dr. L. Belpassi, Dr. D. Zuccaccia

University of Perugia

B.Sc. in Chemistry **2006 - 2009**

- Final grade: 110/110 cum laude
- Thesis title: *Effetto del Mezzo sul Fotocromismo di una Spiroindolino-naftoossazina (Medium Effect on Photochromism of a Spiroindoline-naphthooxazine).*
- Supervisors: Dr. F. Ortica, Dr. P. Gentili

ADDITIONAL INFORMATION

Awards

- LASSIE Marie Curie scholarship (ESR) at Heriot-Watt University (**August 2011**)
- Degree award in honour of Isabella Montanini Mezzasoma, Lion's Club Augusta Perugia (**March 2013**)

Teaching

- Physical Chemistry Laboratory demonstrator, year 1, 2 & 3; Heriot-Watt University, Edinburgh, UK (**2012 - 2014**)

Secondments

- Academic secondment under the supervision of Prof. Liv Hornekær; Aarhus University, Aarhus, DK (**October 2013 - November 2013**)
- Industrial secondment under the supervision of Dr. Graham Cooke; Hiden Analytical, Warrington, UK (**June 2013 - July 2013**)

Engagement in public outreach events

- Get SET challenge, Stars ‘r’ Us!, Heriot-Watt University, Edinburgh, UK (**April 2012**)
- Cheltenham Science Festival, Stars ‘r’ Us!, Cheltenham, UK (**June 2013**)

LANGUAGES

- *Italian*: mother tongue
- *English*: fluent
- *French*: basic

IT SKILLS

- Good knowledge of *quantum chemistry software package* Amsterdam Density Functional (ADF) and Gaussian packages, basic knowledge of Molpro software.
- Deep knowledge of various *operating systems* (MS Windows, Unix, Mac OS)
- Basic knowledge of Wolfram Mathematica and html.
- Deep knowledge of data analysis softwares (Origin Lab, Gnuplot).
- Excellent L^AT_EX and MS Office skills

LIST OF PUBLICATIONS

- “*Non-covalent Interaction of Benzene with Methanol and Diethyl Ether Solid Surfaces*”; D. Marchione, and M. R. S. McCoustra, *Phys. Chem. Chem. Phys.*, 2016, *in print* DOI: 10.1039/c6cp01787h.
- “*Efficient Electron-promoted Desorption of Benzene from Water Ice Surfaces*”; D. Marchione, J. D. Throter, and M. R. S. McCoustra, *Phys. Chem. Chem. Phys.*, 2016 **18**, 4026.
- “*Probing Model Interstellar Grain Surfaces with Small Molecules*”; M. P. Collings, V. L. Frankland, J. Lasne, D. Marchione, A. Rosu-Finsen and M. R. S. McCoustra, *Mon. Not. R. Astron. Soc.*, 2015, **449**, 1826.
- “*The Chemical Bond in Gold(I) Complexes with N-Heterocyclic Carbenes*”; D. Marchione, L. Belpassi, G. Bistoni, A. Macchioni, F. Tarantelli and D. Zuccaccia, *Organometallics.*, 2014, **33**, 4200.

- “*Laboratory Studies of Electron and Ion Irradiation of Solid Acetonitrile (CH₃CN)*”; A. G. M. Abdulgalil, D. Marchione, J. D. Thrower, M. P. Collings, M. R. S. McCoustra, F. Islam, M. E. Palumbo, E. Congiu and F. Dulieu, *Phil. Trans. A*, 2013, **371**, 20110586.
- “*Laboratory Investigations of Irradiated Acetonitrile-Containing Ices on an Interstellar Dust Analog*”; A. G. M. Abdulgalil, D. Marchione, A. Rosu-Finsen, M. P. Collings and M. R. S. McCoustra, *J. Vac. Sci. Technol. A*, 2012, **30**, 0415051.

ARTICLES IN
PREPARATION

- “*Electrons, Excitons and Hydrogen Bonding: Electron-promoted Desorption from Molecular Ice Surfaces*”; D. Marchione and M. R. S. McCoustra, *in preparation*, 2016.
- “*Desorption Kinetics of Water, Methanol, and Diethyl Ether from Silica*”; D. Marchione and M. R. S. McCoustra, *in preparation*, 2016.